

3.4 CULTURAL RESOURCES

3.4.1 Environmental Setting

HERITAGE RESOURCES

The City of Sunnyvale General Plan contains a Cultural Element that is divided into four sub-elements: Recreation, Library, Heritage Preservation, and Cultural Arts. As stated in the Heritage Preservation Sub-element, the term *heritage* encompasses a broader concept than the term *historical*. A community's heritage includes not only its record of historical events and the inventory of its historical buildings, sites and artifacts, but also the cultural legacy of that history. Heritage resources are important because they document the cultural history of a particular place and serve to illustrate the relationship between the present and the past. Each heritage resource enriches the history of a place and adds to a complex pattern of growth and development over time. According to the City of Sunnyvale Heritage Landmarks Inventory, the City's heritage resources consist of the following:

- ❖ 7 landmark structures
- ❖ 1 pair of landmark trees
- ❖ 1 commercial landmark district
- ❖ Cultural resources streetscapes, (blockfaces containing several buildings of architectural or Historical interest and which form a harmonious and pleasing pattern)
- ❖ 1 heritage housing district
- ❖ 64 cultural structures
- ❖ 16 cultural resources trees or tree groups

The most discernible heritage resources in the City are described in the table below.

Table 3.4-1 List of Community Resources	
Resource	Description
BRIGGS-STELLING HOUSE Location: 822 Springfield Terrace	Originally constructed in the 1870's for George H Briggs and extensively reconstructed in the 1920's for the Henry S. Stelling family, the mansion recounts the history of Sunnyvale. Briggs was one of the earliest pioneers who came from Boston in 1854. Stelling, the son of one of San Jose's first orchardists, grew pears and award winning cherries. Under his wife's care, the gardens surrounding the mansion became a showcase.
COLLINS-SCOTT WINERY Location: 775 Cascade Drive	Built in 1881 by the Collins brothers, the Collins-Scott Winery is the oldest brick building in Sunnyvale. In 1889 a private railroad was built on the property and more than 300 gallons of wine were shipped daily. In 1927 all of the buildings except the brick distillery were destroyed by fire. In 1965 the present owners, the Duane Heinlen family, remodeled the structure as it stands today.
MURPHY STATION LANDMARK DISTRICT Location: 100 Block of South Murphy Avenue	<p>"Murphy Station" was established when Martin Murphy, Jr., a California Pioneer, granted the railroad the right-of-way through his land in 1864. The stop saw the arrival and departure of important dignitaries who visited Murphy's Bayview Ranch, a focal point of political and social activity in the Santa Clara Valley.</p> <p>In 1898 William Crossman, a real estate developer, purchased 200 acres from Murphy and named the town Encinal, "Place where the live oak grows." The first</p>

	post office and general store were built on this street near the site of Murphy Station. The town was renamed Sunnyvale in 1901 and incorporated in 1912. The railroad and industrial buildings ran east and west and the business district ran north and south, providing the base from which Sunnyvale grew. The 100 block of South Murphy Avenue is the original downtown commercial district. Most of the structures were built between 1900 and 1940.
VARGAS REDWOOD TREES Location: 501 Hendy Avenue	These Coast Redwoods were planted in 1900 by Manuel Vargas, "Mr. Sunnyvale". The saplings were gathered during a family outing to Pescadero, and planted at the entrance to the Vargas family home.
WESTINGHOUSE MARINE DIVISION Location: 501 Hendy Avenue	Constructed in 1906, Hendy Iron Works was an industrial pioneer in Sunnyvale. Originally producing equipment for mining gold and silver, the Company supplied Marine Engines in both World War I and World War II. In continuous operation from 1906 to 1946, the company was purchased by Westinghouse Electric in 1947.
WRIGHT RANCH Location: 1234 Cranberry Avenue	Originally part of a 320 acre ranch, this is Sunnyvales' oldest remaining ranch house. It was built circa 1870 by William Wright, a 49'er who left the gold fields to raise grain and stock.
DEL MONTE BUILDING Location: 114 S. Murphy Ave.	Built in 1904 by the Madison & Bonner packing Company, the building was used for processing dried fruit from nearby orchards. Cannery mergers in 1916 formed the California Packing Corporation now known as "Del Monte" From 1930 to 1986 the building was used for seed processing and research. In 1993, the building was moved to the northeast corner of the 100 block of S. Murphy Avenue (the Murphy Station Heritage Landmark District) to avoid demolition. The building has since been renovated for commercial use.
SPALDING HOUSE Location: 1385 Ramon Drive	Built in the early 1920's by C.C. Spalding, the mansion served as his family residence. Spalding was the first treasurer of the City of Sunnyvale and is best remembered for his contributions to the development of Murphy Avenue. He organized and established the Bank of Sunnyvale in 1906 and later became a State Legislator.
LIBBY WATER TOWER Location: 444 W. California Avenue	McNeill & Libby opened in 1907 and by 1922 became the world's largest cannery. The original tower supplied water to the cannery and its workers and was replaced in 1965 by the present structure.
Source: City of Sunnyvale, July 2001.	

Although the resources listed above can be found throughout the City, the proposed Moffett Park Specific Plan Area does not contain heritage resources.

ARCHAEOLOGICAL RESOURCES

The proposed plan area has been highly disturbed and degraded due to past grading and development activities. Therefore, there is a low potential for cultural resources to be found within the boundaries of the Moffett Park Specific Plan area. However, past archaeological studies have found prehistoric and historic resources at several locations in the Moffett Park Specific Plan area. These archaeological resources include prehistoric midden, deposits, oyster and Cerethidia shell scatter, Monterey banded and Franciscan chert flakes, possible ground stone fragments, obsidian, yellow chert biface fragment, and possible human bone fragments. In addition, skeletal remains were found during trenching activities on the Lockheed Martin site. The skeletal remains were identified as human skull, arm, pelvic, and finger fragments (Archaeological Resource Management, Cultural Resources Evaluation for the Lockheed Master Use Permit Environmental Impact Report, 1993).

3.4.2 Environmental Impacts and Mitigation Measures

ARCHAEOLOGICAL IMPACTS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For the purposes of this project, a cultural impact is considered significant if the project would:

- ❖ *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

For the purposes of this analysis, the following City of Sunnyvale General Plan Policies and Action Statements are used as thresholds to determine significance. Other Policies and Action Statements identified in the General Plan would not apply because they contain non-mandatory criteria (i.e. “encourage” or “consider” rather than “require”, “avoid”, or “insure”), and/or they do specifically relate to the proposed project.

Heritage Preservation Sub-Element

6.3B.5b. *Identify trees, sites and artifacts which should be considered for cultural resource status.*

IMPACT 3.4-A

Impacts to Archaeological Resources: Unidentified archaeological resources could be disturbed during grading, site preparation, or other construction-related activities associated with future development projects within the Specific Plan Area. The disturbance of unidentified archaeological resources would be considered a potentially significant impact (Potentially Significant Impact If Not Mitigated).

Implementation of the proposed Moffett Park Specific Plan could indirectly result in impacts to unknown cultural resources. Grading and construction activities of future development within the Moffett Park Specific Plan area could potentially disturb buried and unknown resources. Therefore, the following mitigation measures will be required of applicants for future development within the Specific Plan area to minimize potential disturbances to as yet undiscovered resources that could be encountered during construction activity.

Mitigation 3.4-A1

Prior to approval of each grading plan, the property owner/developer shall submit a letter to the Public Works/Engineering Department, Development Division, and the Planning Department, Planning Division, identifying the certified archaeologist that has been hired to ensure that the following actions are implemented:

- a. *The archaeologist must be present at the pregrading conference in order to establish procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of artifacts if potentially significant artifacts are uncovered. If artifacts are*

uncovered and determined to be significant, the archaeological observer shall determine appropriate actions in cooperation with the property owner/developer for exploration and/or salvage.

- b. Specimens that are collected prior to or during the grading process will be donated to an appropriate educational or research institution.*
- c. Any archaeological work at the site shall be constructed under the direction of the certified archaeologist. If any artifacts are discovered during grading operations when the archaeological monitor is not present, grading shall be diverted around the site until the monitor can survey the area.*
- d. A final report detailing the findings and disposition of the specimens shall be submitted to the City Engineer. Upon completion of the grading, the archaeologist shall notify the City to when the final report will be submitted.*

Mitigation 3.4-A2

Prior to approval of each grading plan, the property owner/developer shall submit a letter to the Public Works/Engineering Department, Development Division, and the Planning Department, Planning Division, identifying the certified paleontologist that has been hired to ensure that the following actions are implemented:

- a. The paleontologist must be present at the pregrading conference in order to establish procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of fossils if potentially significant paleontological resources are uncovered. If artifacts are uncovered and determined to be significant, the paleontological observer shall determine appropriate actions in cooperation with the property owner/developer for exploration and/or salvage.*
- b. Specimens that are collected prior to or during the grading process will be donated to an appropriate educational or research institution.*
- c. Any paleontological work at the site shall be constructed under the direction of the certified paleontologist. If any artifacts are discovered during grading operations when the paleontological monitor is not present, grading shall be diverted around the site until the monitor can survey the area.*
- d. A final report detailing the findings and disposition of the specimens shall be submitted to the City Engineer. Upon completion of the grading, the paleontologist shall notify the City to when the final report will be submitted.*

IMPACTS RELATED TO HUMAN REMAINS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For the purposes of this project, a cultural impact is considered significant if the project would:

- ❖ *Disturb any human remains, including those interred outside of formal cemeteries?*

For the purposes of this analysis, the following City of Sunnyvale General Plan Policies and Action Statements are used as thresholds to determine significance. Other Policies and Action Statements identified in the General Plan would not apply because they contain non-mandatory criteria (i.e. “encourage” or “consider” rather than “require”, “avoid”, or “insure”), and/or they do specifically relate to the proposed project.

Heritage Preservation Sub-Element

6.3B.5b. *Identify trees, sites and artifacts which should be considered for cultural resource status.*

IMPACT 3.4-B

Impacts to Human Remains: Unidentified human remains could be uncovered during the construction of future development projects within the proposed Specific Plan Area. (Potentially Significant Impact If Not Mitigated).

No cemeteries have been identified within the project area. However, a gravesite has been recorded within the Moffett Park Specific Plan area on the existing Lockheed Martin campus. Implementation of the proposed Specific Plan could indirectly result in the initiation of future development projects where site grading and earth excavation would be required. Any excavation could potentially uncover buried human remains. Therefore the following mitigation measure would be required to reduce impacts to level considered less than significant.

Mitigation 3.4-B1

Impacts to Human Remains: The following mitigation measure shall be implemented by the property owner/developer and/or their site contractor during the construction of any future development activities or projects within the Specific Plan area:

With future implementation of the proposed Specific Plan, in the event of human remains being discovered during future grading and construction activities, the following steps shall be taken:

- ❖ ***The Santa Clara County Coroner shall be contacted to determine that no investigation of the cause of death is required, and***
- ❖ ***If the coroner determines the remains to be Native American:***

- *The coroner shall contact the Native American Heritage Commission within 24 hours.*
- *The Native American Heritage Commission shall identify the person or persons it believes to be most likely descended from the deceased Native American.*
- *The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resource Code Section 5097398, or*
- ❖ *Where the following conditions occur, the landowner or his authorized representatives shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.*
 - *The Native American Heritage Commission is unable to identify a most likely descendant or the most likely descendant failed to make a recommendation within 24 hours after being notified by the commission.*
 - *The descendant identified fails to make a recommendation; or*
 - *The landowner or his authorized representative rejects the recommendation of the descendant, and mediation by the Native American Heritage Commission fails to provide mitigation measures acceptable the landowner (Less Than Significant Impact With Mitigation).*

3.4.3 Conclusion

With the implementation of the mitigation measures identified in this section, the cultural resource impacts of the future development projects under the direction of the Moffett Park Specific Plan would be reduced to less than significant levels.

3.5 GEOLOGY AND SOILS

3.5.1 Environmental Setting

REGIONAL GEOLOGY

The proposed Moffett Park Specific Plan area lies within the City of Sunnyvale in Santa Clara Valley, which is transected by the San Andreas and Calaveras fault zones. Santa Clara Valley, situated between the northwest-trending Santa Cruz Mountains to the west and the Diablo Range to the east, is in the shape of a large trough that has been filled by sediments largely shed from these adjacent mountain ranges. The City of Sunnyvale, which borders the San Francisco Bay to the north, has a relatively flat topography with an average slope of approximately one percent (Sunnyvale Futures Study Draft Program EIR, March 1993).

The Santa Clara Valley is principally underlain by stream-deposited alluvium of the Quaternary period (approximately 2 million years ago to present) consisting of clay, silt, sand, and gravel. These deposits are loose, generally unconsolidated materials deposited by erosional processes, and extend to well below 1,000 feet in the deepest areas of the valley, though are only about 200 feet deep in the vicinity of the Specific Plan area. The younger alluvium primarily consists of unconsolidated sand, gravel, silt, and clay created by coalescing alluvial plains, outwash plain deposits, and fine-grained marine clays. Coarse-grained sediments were deposited by bifurcating and braided stream channels, and are believed to comprise only 10 to 15 percent of the shallow subsurface soils (McLaren Environmental Engineering, 1988).

The infrastructure carrying surface water to the Plan area consists of the Sunnyvale West Channel and East Channel, both of which flow south-to-north through the proposed Specific Plan project area. The San Francisco Bay Salt Evaporators and Guadalupe Slough are also nearby, located approximately one mile to the north. Groundwater flow is generally to the north-northeast towards the San Francisco Bay. Prior to the development of Lockheed Martin facilities in 1958, the Specific Plan area was under agricultural production. Principally because of groundwater withdrawal from wells for the purposes of crop irrigation, the Santa Clara Valley has experienced subsidence of the ground surface. By 1967, total land subsidence reached as much as 8 feet in the Sunnyvale-San Jose area, with the magnitude of subsidence decreasing toward the edges of the valley. Geologic surveys between 1967 and 1971 show that subsidence has virtually stopped; this is attributed to the marked reduction of groundwater abstraction as land use shifted from agricultural to residential and commercial uses. Some locations in the western area of the proposed Moffett Park Specific Plan have experienced a total land subsidence of up to approximately 6 feet (Geotechnical Report for Juniper Networks, Treadwell & Rollo, Inc., November 2, 2001).

REGIONAL SEISMICITY

The major active faults in the project area are the San Andreas, San Gregorio, Hayward, and Calaveras Faults. These and other minor faults of the region are shown on Exhibit 3.5-1. For each of the active faults, the distance from the Plan area and estimated maximum Moment magnitude (M_w) are summarized in Table 3.5-1.

Exhibit 3.5-1
Major active faults

Table 3.5-1
Regional Faults and Seismicity

Fault Segment	Approximate Distance from Plan area (km)	Direction from Plan area	Maximum Magnitude
Monte Vista	10	Southwest	6.8
Hayward - South East Extension	14	Northeast	6.4
San Andreas – 1906 Rupture	15	Southwest	7.9
San Andreas – Peninsula	15	Southwest	7.2
Southern Hayward	17	Northeast	6.9
Northern Calaveras	20	East	7.0
Central Calaveras	20	East	6.6
San Andreas – Santa Cruz Mnts.	26	South	7.2
Sargent	31	South	6.8
San Gregorio North	34	West	7.3
Zayante-Vergeles	36	South	6.8
Mount Diablo Thrust	41	Northeast	6.7
Southern Greenville	43	Northeast	6.9
Northern Hayward	44	North	6.6
Concord	54	North	6.5
Monterey Bay - Tularcitos	55	South	7.1
Rodgers Creek	80	North	7.1

Source: Treadwell & Rollo, Inc., Geotechnical Report for Juniper Networks, November 2, 2001.

Various methods are used to determine the impact an earthquake can have on the areas surrounding a fault. These methods include the Modified Mercalli Intensity (MM) scale, Richter, the slip rate, recurrence intervals, and maximum probable and maximum credible magnitudes.

- ❖ MM is a commonly used method for describing the intensity of ground motion and is used to emphasize the current seismic environment at a site. Intensity scales measure groundshaking severity according to historical damage done to structures, changes in the earth surface, and personal accounts. Because the MM scale uses subjective measures to describe the intensity of an earthquake, there may be a number of values of intensity on the scale since the observable effects may vary from location to location. Table 3.5-2 defines the MM scale numbers and compares the scale to the Richter magnitude scale.
- ❖ The Richter magnitude scale measures the amount of energy released during an earthquake.
- ❖ The slip rate is the average rate of displacement of a point fault as measured by built or geological features whose age can be estimated.

- ❖ A recurrence interval is the estimated period of time between earthquake events along the same fault trace.

Table 3.5-2
Richter Magnitude and Modified Mercalli Intensity Scale of 1931

Richter Magnitude	Modified Mercalli Scale	Description
2	I	Not felt except by a very few under especially favorable circumstances.
2	II	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
3	III	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motorcars may rock slightly. Vibration like passing of truck. Duration estimated.
4	IV	During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motorcars rocked noticeably.
4	V	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
5	VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
5-6	VII	Everybody runs outdoors. Damage negligible in building of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motorcars.
6	VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motorcars disturbed.
7	IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
7-8	X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.
8+	XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bend greatly.
8+	XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.
Source: USGS, The Severity of an Earthquake, US. Government Printing Office 1989-288-913.		

Exhibit 3.5-1 also shows the earthquake epicenters for events with magnitude greater than 5.0 from January 1800 through January 1996. Since 1800, four major earthquakes have been recorded on the San Andreas Fault. In 1836 an earthquake with an estimated maximum intensity of VII on the MM scale occurred east of Monterey Bay on the San Andreas Fault. The estimated Moment magnitude, M_w , for this earthquake is about 6-1/4. In 1838, an earthquake occurred with an estimated intensity of about VIII-IX (MM), corresponding to a M_w of about 7-1/2. The San Francisco Earthquake of 1906 caused the most significant damage in the history of the Bay Area in terms of loss of lives and property damage. This earthquake created a surface rupture along the San Andreas Fault from Shelter Cove to San Juan Bautista, approximately 470 kilometers in length. It had a maximum intensity of XI (MM), a M_w of about 7.9, and was felt 560 kilometers away in Oregon, Nevada, and Los Angeles. The most recent earthquake to affect the Bay Area was the Loma Prieta Earthquake of October 17, 1989, in the Santa Cruz Mountains with a M_w of 6.9, approximately 43 km from the Plan area.

The seismically active Hayward/Calaveras Fault Zone trends along the eastern boundary of Santa Clara Valley and north through the East San Francisco Bay. In 1868 an earthquake with an estimated maximum intensity of X on the MM scale and M_w of 7.0 occurred on the southern segment (between San Leandro and Fremont) of the Hayward Fault. In 1861, an earthquake of unknown magnitude (probably a M_w of about 6.5) was reported on the Calaveras Fault. The most recent significant earthquake on this fault was the 1984 Morgan Hill earthquake, which produced a M_w of 6.2.

In 1999, the WGCEP at the U.S. Geologic Survey (USGS) predicted a 70 percent probability of a magnitude 6.7 or greater earthquake occurring in the San Francisco Bay Area by the year 2030. Specific estimates of the probabilities for different faults in the Bay Area are presented in Table 3.5-3.

Table 3.5-3 WGCEP (1999) Estimates of 30-Year Probability (2000 to 2030) of a Magnitude 6.7 or Greater Earthquake	
Fault Probability (percent)	
Hayward-Rodgers Creek	32
San Andreas	21
Calaveras	18
San Gregorio	10
Concord-Green Valley	6
Greenville	6
Mount Diablo	4
Source: Treadwell & Rollo, Inc., Geotechnical Report for Juniper Networks, November 2, 2001.	

3.5.1 Environmental Impacts and Mitigation Measures

GEOLOGIC/SEISMIC IMPACTS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For the purposes of this project, a geologic impact is considered significant if the project would:

- ❖ Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - a) *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?*
 - b) *Strong seismic ground shaking?*
 - c) *Seismic-related ground failure, including liquefaction?*
- ❖ Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
- ❖ *Result in substantial soil erosion or the loss of topsoil?*
- ❖ Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

For the purposes of this analysis, the following City of Sunnyvale General Plan Policies and Action Statements are used as thresholds to determine significance. Other Policies and Action Statements identified in the General Plan would not apply because they contain non-mandatory criteria (i.e. “encourage” or “consider” rather than “require”, “avoid”, or “insure”), and/or they do not specifically relate to the proposed project.

Action Statement 2.4A.1e. Require geotechnical reports for new developments and redevelopments north of Highway 237.

The potential geologic and seismic hazards identified for the proposed Specific Plan area are not substantially different from other Bay Area and Northern California areas. Potential geologic and seismic hazard impacts that would result from future development activities upon implementation of the proposed Moffett Park Specific Plan project could include:

IMPACT 3.5-A

Foundation and Settlement Impacts: Surface loading and other stresses can cause soils to settle. Settlement occurs when loosely consolidated materials and fills collapse into soil pore space under the weight of structures. Future, as yet unknown construction projects in the proposed Specific Plan area, could be subject to differential ground settlement, which could cause

structural damage to future building projects (Potentially Significant Impact if not Mitigated)

Mitigation 3.5-A: *Foundation and Settlement Impacts: All grading shall be in conformance with Title 16, "Buildings and Construction," of the City of Sunnyvale Municipal Code. Prior to approval of each grading plan, the property owner/developer shall submit a soils and geological report in conformance with Title 16 of the Sunnyvale Municipal Code.*

IMPACT 3.5-B **Expansive Soil:** Shrink and swell movement from expansive soil in the Plan area could result in significant impacts to future proposed structures with implementation of the proposed Specific Plan (Potentially Significant Impact if not Mitigated).

Mitigation 3.5-B: *Expansive Soil: Incorporation of Mitigation Measure 3.5-A1, above, will reduce potentially significant impacts associated with Expansive Soils to less-than-significant levels.*

IMPACT 3.5-C **Liquefaction:** In the event of a major earthquake, the proposed Specific Plan area would experience strong ground shaking similar to other areas in the Bay Area. Due to the Plan area's proximity to several nearby active faults, very strong to violent ground shaking is expected to occur in the Plan area during a major earthquake. Very strong ground shaking during an earthquake can result in ground failure such as that associated with soil liquefaction.

When a saturated, cohesionless soil liquefies during a major earthquake, it experiences a temporary loss of shear strength due to a transient rise in excess pore water pressure generated by strong ground motion. On a Relative Seismic Stability Map for Santa Clara County (Rogers 1974), the proposed Specific Plan area is within a zone designated as high potential for liquefaction, lurching, and lateral spreading, with the water table at places within 10 feet of the ground surface.

The draft Seismic Hazards Zone map of the Mountain View Quadrangle (of which the City and proposed project are a part) indicates that Specific Plan area is within a "Zone of Required Investigation" due to liquefaction potential. The map, which became official on June 14, 2002, indicates that investigation is required for "Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required." With implementation of Mitigation Measure 3.5-C1, impacts would be reduced to less-than-significant levels. (Potentially Significant Impact If Not Mitigated).

Mitigation 3.5-C1: *Liquefaction: Prior to issuance of each building permit, the proposer owner/developer shall submit for review and approval, detailed foundation design information for the subject building(s), prepared by a civil engineer, based on recommendations by a geotechnical engineer.*

Mitigation 3.5-C2: *Liquefaction: The final geotechnical report shall demonstrate compliance with, and adherence to, Public Resources Code Section 2690 and the Mountain View Quadrangle Seismic Hazards Map.*

IMPACT 3.5-D **Seismic Shaking:** Seismic ground accelerations would result in lateral and vertical forces on structures at the ground surface, for future, as yet unknown developments that could occur with implementation of the proposed Specific Plan. Strong seismic shaking could result in potential damage to structures within the Moffett Park Specific Plan area. Consequently, structural impacts associated with seismic shaking are considered potentially significant (Potentially Significant Impact If Not Mitigated).

Mitigation 3.5-D: *Seismic Shaking: Prior to issuance of each foundation permit, the property owner/developer shall submit a report by a geotechnical engineer for review and approval that shall investigate the subject foundation excavations to determine if soft layers are present immediately beneath the footing site and to ensure that compressibility does not underlie the footing.*

IMPACT 3.5-E **Erosion:** The proposed Specific Plan area is relatively flat; therefore, there is little potential for erosion. As discussed in Section 3.7, *Hydrology, Drainage, Flooding and Water Quality*, future development projects of 5 acres or greater will be required to comply with the National Pollutant Discharge and Elimination (NPDES) Statewide Industrial Stormwater Permit for General Construction Activities. Compliance with this permit will include implementing erosion controls as necessary during construction.

Much of the proposed Moffett Park Specific Plan area is currently covered by impervious surfaces (e.g., concrete, asphalt) or landscaped areas and will continue as such with implementation of the proposed Specific Plan. Therefore, with implementation of the proposed Moffett Park Specific Plan, future development projects will continue to reflect the urban character of Moffett Park, and would continue the trend of paving and landscaping to meet individual project parking, landscaping and setback requirements; as a result, the erosion potential for the Plan area will remain low in the long-term, and no significant long-term impacts from erosion are identified (Less-than-Significant Impact).

Mitigation 3.5-E: *Erosion: Mitigation Is Not Required*

IMPACT 3.5-F

Seismic Densification: Soil borings sampled on the former Lockheed site in the western portion of the Plan area did not encounter loose material susceptible to seismically induced ground settlement (Treadwell & Rollo, Inc., Geotechnical Investigation Juniper Networks Campus, November 2, 2001). However, there may be other areas within the Specific Plan boundaries that may contain localized areas of loose, clean granular soil above the water table, where seismically induced ground settlement could result in potentially significant impact to proposed structures (Potentially Significant Impact If Not Mitigated).

The Plan area is located within a seismically active region. Very strong ground shaking during an earthquake can result in ground surface settlement associated with seismic densification. Seismic densification can occur during strong ground shaking in loose, clean granular soils above the water table. Therefore, the potential exists for localized densification and surface settlement in a seismic event. Mitigation measures are required.

Mitigation 3.5-F:

Seismic Densification: Prior to approval of each final grading plan, the property owner/developer shall consult with a qualified Geotechnical Engineer to confirm areas of fill that would require excavation and re-compaction prior to initiation of construction activities. These areas shall be identified on all final grading plans, and the contractor shall excavate and re-compact the loose fill during grading of the site. (Less Than Significant Impact With Mitigation.)

3.5.2 Conclusion

With the implementation of the mitigation measures identified in this section, geologic and seismic impacts would be reduced to less than significant levels.

3.6 HAZARDS AND HAZARDOUS WASTE

3.6.1 Environmental Setting

This section of the document summarizes the cause and effect on both external and internal factors that would affect or be affected by implementation of the proposed Moffett Park Specific Plan. Included in this analysis is a review of conventional hazard exposure, hazardous waste and materials exposure (including potential risk of upset or accidental releases) and the recently enacted Homeland Security Initiative.

Portions of the project area and sites adjoining the project area have a legacy of contamination from a myriad of sources involving past industrial, military, and research land-uses. Where applicable, these specific sites and/or areas are described herein to provide a comprehensive overview of potentially significant hazardous materials conditions.

Since the 1950's, Sunnyvale's citywide growth and growth in the Moffett Park industrial area have been dominated by defense-oriented companies. During the last three decades, the City's growth has been closely tied with the evolution of the electronics industry. Both of these industrial sectors are dependent on the use of hazardous materials. A majority of the businesses in the Moffett Field Business Park are related to the electronic industry and/or defense-related oriented industry and thus use hazardous materials.

These materials are routinely transported into and around the City by truck, rail and pipeline. They are stored in varied quantities in above and below ground containers. Federal, State, and Local agencies regulate the transporters and users of hazardous substances, materials and waste independently of the CEQA process. However, the sheer volume of the materials being handled can lead to misuse and accidents that threaten the environment and, more importantly, can take human life with a brief amount of exposure.

Lockheed Martin Space Systems Company

According to the Phase I Environmental Site Assessment conducted by the Clayton Group on March 1, 2001, the proposed Specific Plan area includes the 660-acre Lockheed Martin Space Systems Company (LMSSC) Plant One site, which has been the subject of substantial environmental investigation since 1969. This site is located within the boundaries of the Specific Plan area, and thus is discussed herein.

The California Regional Water Quality Control Board (RWQCB) under Site Cleanup Requirement Order No. 88-013 (Order 88-013) has formally regulated the Plant One site soil and groundwater investigation and redemption since 1988. During these investigations, a total of 44 potential sources of contamination associated with research and manufacturing activities at the Plant One site have been identified. Seven of these areas are located within the proposed project site. The seven potential source areas are identified as Building Areas 14E/041, 102, 103, 113, 118, 125, and 142. The sources of known contamination at Building Areas 14E/041, 102, 103 and 125 have been remediated through soil excavation and confirmation soil sampling. It has been demonstrated, to the satisfaction of the RWQCB, that no releases have occurred on site and no source redemption was necessary at the remaining potential source areas. As such, the seven source areas have undergone remediation and/or met the requirements of the RWQCB (*Clayton Group Phase I, 2002 pp.41*).

Groundwater investigations conducted on the Lockheed Martin site have included the installation and monitoring of at least 30 groundwater monitor wells. Currently, 10 wells remain active at the proposed project site; the others were previously abandoned. Based on water quality data recently collected from wells located both onsite and offsite, the proposed project site is currently known to be impacted with the following volatile organic compounds (VOC's) in the vicinity of Building Area 14E/041.

- ❖ Trichloroethene (TCE) is present in groundwater at the subject property at concentrations of approximately 30 parts per billion (ppb) in the first transmissive zone. This contamination is localized around building 041, which was identified as a potential source area. TCE does not appear to be present in the second transmissive zone.¹
- ❖ Tetrachloroethene (PCE) concentrations in the groundwater of the first transmissive zone are slightly above the (MCL) of 5.0 ppb. This contaminant is also localized around Building 041. No PCE appears to be present in the second transmissive zone.
- ❖ Freon-113 was detected in the second transmissive zone in the vicinity of Building Area 14E/041 at a concentration of 3,360 ppb. The MCL for Freon 113 in groundwater is 1,200 ppb and the public health goal is 4,000 ppb. The public health goal is set by the California Environmental Protection Agency (Cal EPA) and represents their opinion as the level of a contaminant in drinking water below which there is no known or expected risk to health.

The above-mentioned Phase 1 report notes that recent analytical testing of groundwater at the Plant One Site shows contaminant concentrations above clean up criteria, but at least one order of magnitude lower than was initially found. Groundwater concentrations are nearing drinking water standards. Because of this progress, on December 6, 2000, the RWQCB rescinded Order 88-013 and issued Order 00-124, which established final clean up standards and requirements for evaluating the effectiveness of the final remedy for cleaning up groundwater contamination.

The Lockheed Martin site also includes 12 former and 2 active petroleum product UST's. Lockheed Martin Space Systems Company (LMSSC) removed all single-walled UST's and upgraded the remaining tanks to double walled construction with leak detection equipment. During each UST investigation and removal action, petroleum contamination in soil that exceeded regulatory levels was excavated and disposed of in accordance with local, state, and federal requirements. Groundwater monitoring in the vicinity of the current and former UST areas appears to show that the release of petroleum products to the environment has been mitigated.

The two-acre Building 14E/041 area was used as a hazardous waste storage area from 1959 through the mid 1980's. In 1986, this area was decommissioned by the 660-acre LMSSC. During the decommissioning, waste oil underground storage tanks (UST's) and other hazardous wastes were removed and subsurface contamination discovered. As mentioned above, sources of the subsurface contamination in soil were excavated and ground water monitoring commenced. LMSSC concluded that site 14E was not an active source of groundwater contamination and no further remediation was recommended.

¹ According to Jon A Rosso, Director of Environmental Services at the Clayton Group, (in a telephone conversation conducted on November 8, 2001) the Regional Water Quality Control Board (RWQCB) requested that the Clayton groups assess contamination in two water bearing zones. These zones are identified and the first and second transmissive zones. A layer of clay substrates that limit vertical transmission of contamination separates these two water-bearing zones.

NASA Ames Research Center

The NASA/Ames site located east of the Specific Plan area is home to a large number of research and development projects where many different hazardous substances were used. At any given time, there could be more than 5,000 hazardous substances in the laboratories, shops, and other facilities within the Ames Campus area, producing a comparable number of types of hazardous waste. The quantities of these substances are often small involving ounces or grams of particular substances (*Environmental Resources Document for the National Aeronautics and Space Administration Ames Research Center*, June 1992, pp. 3-36 – 3-48).

A Regional Plume of contaminated groundwater flows northward beneath the Ames Research Center and a portion of the Specific Plan area towards the San Francisco Bay. The Regional Plume stems from two main sources: an EPA-designated Superfund site outside of the study area at the Middlefield-Ellis-Whisman site located across Highway 101, and contamination from the operation of a dry cleaning facility, a former aircraft wash rack and sump, a fueling station, and numerous underground storage tanks at Moffett Field during the administration of the base by the Navy. EPA and the companies responsible for the Middlefield-Ellis-Whisman contamination executed a Record of Decision (ROD) in 1989 that included an agreement on remediation of the plume. EPA later determined that cleanup of soil and groundwater at Moffett Field was subject to the Middlefield-Ellis-Whisman ROD. The Navy and the Middlefield-Ellis-Whisman companies are jointly conducting remediation under EPA supervision. NASA has also contributed contamination in the northern section of the plume and has installed a remediation system that started operations in 2001.

There are three sites immediately adjacent to the Specific Plan area with the potential to provide hazardous materials impacts. Two are within the Sunnyvale Baylands Park and one is located within the Twin Creeks Sports Complex. The Sunnyvale Baylands Park includes leaking underground tanks and a portion of the Regional Plume in which PCB's and TEPH were detected in the groundwater. The second at the Twin Creeks Sports Complex includes a former electrical sub-station in which PCB's have been detected.

According to the *Administrative Draft Environmental Impact Study prepared for the NASA Ames Development Plan, Design, Community & Environment, July 2001*, the three sites listed above that could impact the Specific Plan area include:

- ❖ Twelve underground storage tanks in the Sunnyvale Baylands Park that includes the National Full-Scale Aerodynamics Complex and surrounding area. Several of the underground storage tanks have leaked and most have been removed. Analyses of soil and groundwater samples from this area have detected petroleum hydrocarbons and VOC's. NASA has prepared a Removal Action Work Plan for the site that has been finalized by the State Of California. In addition to the petroleum hydrocarbons and VOC's, previous investigation along the west side of the area that borders the Specific Plan area has shown TCE concentrations above clean-up levels. This area will be studied and remediated separately.
- ❖ Transformer oil containing PCB's were historically used in many of the transformers within the Ames campus. PCB's were detected above the restricted area clean-up level in one soil sample from a Sub-station known as the N221C Sub-station. TEPH was detected above the petroleum hydrocarbon clean-up level at the N227 Unitary Sub-station. Both of these sub-stations are located adjacent to the easterly side of the Specific Plan area. NASA has proposed in-situ

bioremediation of fuel-contaminated soils at the N227 Unitary Sub-station, and excavation of PCB contaminated soils at the N221C Sub-station.

- ❖ Two other electrical Sub-Stations (N225 and N225A), a drum storage area, and one underground storage tank located on the western portion of the Ames Campus and bordering the northeastern portion of the Specific Plan area existed. The drum-storage area was closed in the mid-1980's, and the tank was removed in 1990. The electrical sub-stations remain and recent (2000) analysis of soil and groundwater samples from this area has detected petroleum hydrocarbons, PCB's and VOC's. NASA has not addressed a remediation strategy for the electrical sub-stations.

Moffett Park Specific Plan area

A Phase I Environmental Site Assessment (ESA) was conducted by RBF Consulting (August 2002) to identify obvious recognized environmental conditions in connection with the previous and current land uses and with ownership within the plan area. RBF Consulting performed this assessment in conformance with the American Society for Testing and Materials (ASTM) E 1527-00 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Comprehensive review of the site assessment did not disclose any new sites not previously reported for the Lockheed Martin Space Systems Company site or the NASA Ames Research Center.

Homeland Security

The attacks of September 11, 2002 highlighted the fact that terrorists are capable of causing enormous damage to our country by attacking our critical infrastructure – those assets, systems, and functions vital to our national security, governance, public health and safety, economy, and national morale. The Department of Homeland Security is tasked to coordinate a national effort to secure America's critical infrastructure. Protecting America's critical infrastructure is the shared responsibility of federal, state, and the City of Sunnyvale, in active partnership with the private sector, which owns approximately 85 percent of our nation's critical infrastructure. The Department of Homeland Security will concentrate this partnership in a single government agency responsible for coordinating a comprehensive national plan for protecting our infrastructure.

Emergency Preparedness

As with most jurisdictions in California, the City of Sunnyvale has established an Emergency Management Organization (EMO) to provide delivery of services in an emergency or disaster utilizing the protocols established by the California Office of Emergency Services (OES). The Sunnyvale Department of Public Safety, Hazardous Materials Compliance (HMC) unit is the Certified Unified Program Agency (CUPA) for the City. The focus of the HMC is the prevention of hazardous materials discharges that could adversely affect community safety or the environmental. Local ordinances, state codes, and regulations provide the authority and direction for this permitting and inspection program.

Since the "9/11" attacks, the Sunnyvale CUPA has incorporated the policies established by the new Federal Department of Homeland Security. City employees are trained in emergency preparedness activities. During a disaster, such as a major earthquake, City employees will assist in the provision of disaster relief services. Many City employees are pre-assigned emergency tasks and others can be deployed as needed. Additionally, the City has the option of requesting assistance through an established network of Federal, local, regional and state mutual aid.

Another preparedness program called “Sunnyvale Neighborhoods Actively Prepare” (SNAP) has been implemented to encourage self-sufficiency at the neighborhood level. In cooperation with the American Red Cross and local school districts, the City has established a disaster shelter program called project “ARK,” which includes a series of storage facilities for emergency preparedness and response materials. The program involves stocking large containers with emergency supplies for up to 300 people for 3 days. Currently there are 12 ARKs at 8 school sites throughout the City.

In addition to the above Citywide programs, the City participates in the California Accidental Release Prevention Program (CalARP), directed by the County of Santa Clara, Department of Environmental Health, Hazardous Materials Compliance Division. The CalARP program requires owners or operators of “regulated substances” (any hazardous substance, unless otherwise indicated, as listed in *19 CCR, 2770.5*) to register the storage or use of hazardous materials with the County’s Hazardous Materials Compliance Division, which implements Federal and State regulations regarding the registration and accidental release of hazardous materials.

Amateur radio operators in the community of have organized as an active emergency response group called Sunnyvale Amateur Radio Services (SARES). This group provides assistance to the Public Safety Department at both routine special events when additional radio communications are needed and during emergencies/disasters. SARES will play a major role in providing amateur radio communications during an emergency or disaster. In preparation for such an event emergency radio equipment and atones have been installed at pre-designated locations throughout the City.

3.6.2 Environmental Impacts and Mitigation Measures

HAZARDOUS MATERIALS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For the purposes of this project, an impact related to hazardous materials is considered significant if the project would:

- ❖ *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*
- ❖ *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*
- ❖ *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

For the purposes of this analysis, the following City of Sunnyvale General Plan Policies and Action Statements are used as thresholds to determine significance. Other Policies and Action Statements identified in the General Plan would not apply because they contain non-mandatory criteria (i.e.

“encourage” or “consider” rather than “require”, “avoid”, or “insure”), and/or they do not specifically relate to the proposed project.

Policy 2.4A.3 Promote a living and working environment safe from exposure to hazardous materials.

Action Statement .3.4.A.3a Maintain current information on the hazardous material used in Sunnyvale businesses and their potential hazards to the community.

Title 20 of the Sunnyvale Municipal Code provides guidelines and regulations regarding the zoning restrictions of new development.

20.16.010 Each applicant for a permit pursuant to this title, and/or pursuant to Title 21, pertaining to underground storage, shall file a written plan, for city's approval, to be known as a hazardous materials management plan (HMMP), which shall demonstrate the suitable storage of hazardous. The HMMP may be amended at any time with the consent of city. The HMMP shall be a public record except as otherwise specified. Approval of the HMMP shall mean that the HMMP has provided adequate information for the purposes of evaluating the permit approval. Such approval shall not be understood to mean that the city has made an independent determination of the adequacy of that which is described in the HMMP. (Ord. 2350-90 § 1, (part); Ord. 2056-83 § 1 (part)).

Hazardous wastes, materials and remediation efforts are regulated independently of the CEQA process by a myriad of Federal, State and Local laws and regulations. Federal, State and Local agencies enforce these laws and regulations. Hazardous wastes, materials and remediation issues are addressed in the CEQA process to identify and evaluate possible impacts to human, plant, and animal populations that could potentially result from implementation of the proposed project.

IMPACT 3.6-A Hazardous Materials Impacts: The proposed Specific Plan does not have the potential to create a significant hazard to the public through foreseeable hazardous materials upset or accidental conditions (Less Than Significant Impact).

The proposed project is not anticipated to result in a direct release of hazardous materials into the environment. However, implementation of the proposed Specific Plan may result in subsequent, short-term periods of site-specific construction within the Plan area. As such, there is the possibility of accidental release of hazardous substances such as petroleum-based fuel spills used for construction equipment. The level of risk associated with the accidental release of hazardous substances is not considered significant due to the small volume and low concentration of hazardous materials utilized during site construction phases. Project contractors responsible for construction of future development projects within the Specific Plan area would be required to use standard construction controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices are regulated independently of the CEQA process, and would be observed such that any materials released are appropriately contained and remediated as required and monitored by local, state, and federal law.

Additionally, implementation of the proposed Specific Plan would allow for an increase in the density and intensity of existing uses and/or the conversion of existing use (e.g. research and development) to a use specified within the Specific Plan (See Section 2.0, *Project Description*, for a list of allowable land uses). These uses may utilize limited amounts of “household” hazardous materials (i.e., cleaning solutions, aerosols, halogen light fixtures, solvents) on-site; however, these substances would not be anticipated to be stored in quantities that would pose a significant environmental risk to patrons and/or employees. As such, potential accidental conditions would not perpetuate a release of hazardous materials. Therefore, impacts associated with an accidental release of hazardous materials or substances would be considered less than significant. Refer to Impact 3.6-C for a discussion of potentially significant hazardous materials impacts associated with past uses within the Specific Plan area. No mitigation measures are required.

Mitigation 3.6-A ***Hazardous Material Impacts: Mitigation Is Not Required.***

IMPACT 3.6-B **Hazardous Materials Impacts: The proposed project would not directly emit hazardous materials and thus would not affect any school located within ¼ mile of the project site (Less Than Significant Impact).**

As previously stated in Impact 3.6-A above, the uses allowed within the Specific Plan area would not require quantities of hazardous materials that would represent a potentially significant hazard to uses such as Cogswell Polytechnical College located within, or adjacent to, the Specific Plan area, nor would implementation of the Specific Plan, as a policy document, result in the direct release or use of hazardous materials or waste. Since the proposed project would not directly involve the use of significant amounts of hazardous materials, less than significant impacts to this school would be anticipated to occur (see also Impact 3.6-C below).

Mitigation 3.6-B ***Hazardous Material Impacts: Mitigation Is Not Required.***

IMPACT 3.6-C **Hazardous Materials Impacts: The proposed project is located within an area of the City where extensive investigation and remediation has been completed on site-specific parcels in the past. Although the need for additional area-wide assessments has not been identified, measures are necessary to ensure that future development/redevelopment of sites within the Specific Plan area adequately address the potential for encountering possible hazardous materials/substances during site preparation and/or construction. (Less Than Significant Impact With Mitigation).**

According to the Phase I Environmental Site Assessment prepared by Clayton Group Services for the recently approved Juniper Networks Corporate Campus Project, dated March 1, 2001, the Moffett Park Specific Plan area has a history of contamination associated with previous on-site activities. The Phase I Environmental Site Assessment conducted for the Specific Plan area (RBF Consulting, August 2002,) verified and confirmed the level of contamination and remediation indicated in the prior analyses completed for specific project sites within and/or proximate to, the Moffett Park Specific Plan area. Documentation of areas of concern from both Phase I reports (RBF Consulting and Clayton Group Services) includes existing and former UST's, agricultural pesticides and groundwater contamination.

These conditions have been effectively evaluated and the nature and extent of contamination arising from the former activities have been defined. In addition, the *Administrative Draft Environmental Impact Study prepared for the NASA Ames Development Plan, Design, Community & Environment, July 2001* describes the level of contamination past and present of the NASA Ames Research Center. Remediation of hazardous waste in three areas bordering the Specific Plan area has occurred but there are areas in which additional monitoring and/or remediation is necessary.

Although development/redevelopment of specific sites within the Specific Plan area would not occur as a direct result of this project (e.g. the project only formulates a land use plan and supporting policies for the Moffett Park Specific Plan area), future development/redevelopment conducted in accordance with the Moffett Park Specific Plan could encounter sites with a history of hazardous materials/substances use, storage or contamination. If contamination levels at these sites in excess of federal, state and local standards are encountered by unprotected construction workers or the public from the listed sites, or from areas that were not known to be contaminated, it would be a significant health impact. However, it should be noted that there are existing federal and state policies and procedures that require the delineation and remediation of hazardous waste sites to the satisfaction of the designated lead agency. In addition, it is unlikely that contamination from these sites would be extensive or beyond the capabilities of typical remediation. Implementation of the mitigation measures prescribed below would reduce health impacts associated with development of specific projects within the Moffett Park Specific Plan area

Mitigation 3.6-C1

Hazardous Material Impacts: Prior to approval of the first grading plans or issuance of the first demolition permit, the property owner/developer shall retain the services of a qualified environmental professional or registered Environmental Assessor to conduct an investigation for the presence of underground storage tanks, agricultural pesticides and groundwater contamination. Soil sampling or a soil organic vapor survey may be required if soil sampling results are not available, or indicate contamination is present above regulatory guidelines or standards. If warranted, subsurface investigation and sampling shall be undertaken and appropriate remediation measures developed, if necessary, before demolition, excavation or grading takes place.

Mitigation 3.6-C2

Hazardous Materials Impacts: Prior to approval of the first grading plan or issuance of the first demolition permit, whichever occurs first, the property owner/developer shall submit a plan which details procedures that will be taken into account if a previously unknown USTs, or other unknown hazardous materials or waste, is discovered onsite. If the project applicant/developer or their contractor discovers unknown waste/materials or an underground tank or piping during grading or construction, which he/she believes may involve hazardous waste/materials, the contractor shall, at minimum:

- ❖ ***Immediately stop work in the vicinity of the suspected contaminant, removing workers and the public from the area;***
- ❖ ***Notify the Project Engineer of the implementing agency;***
- ❖ ***Secure the area as directed by the Project Engineer; and***

❖ *Notify the implementing agency's Hazardous Waste/Materials Coordinator (Less Than Significant Impact With Mitigation).*

IMPACT 3.6-D **Underground Storage Tank Impacts: The proposed project site contains several former and current underground tank sites (Less than Significant Impact).**

The Lockheed Martin portion of the Specific Plan area includes twelve (12) former and two (2) active petroleum product underground storage tanks (UST's). The Phase I report for the Specific Plan area did not disclose any additional UST's outside of those specified within the Lockheed Martin site. As previously mentioned, during the investigation and removal of the former on-site UST's at the Lockheed Martin site, contaminated soil that exceeded regulatory levels was excavated and disposed of in accordance with established regulatory requirements. Subsequent ground water monitoring within the vicinity of these tanks indicates that this former release of petroleum products has been mitigated. However, during the buildout of the proposed project, the two existing UST's will be removed by Lockheed under their building closure procedures. Soil contamination from underground tanks during an earthquake is also a major issue. All new development shall be subject to Title 20 and 21 of the Sunnyvale Municipal Code. Closure of underground storage tanks in accordance with local, state, and federal requirements would result in less-than-significant impacts.

Mitigation 3.6-D ***Underground Storage Tank Impacts: Mitigation Is Not Required.***

IMPACT 3.6-E **Asbestos/Lead Impacts: Based upon the year many of the existing structures were constructed (pre-1978), the potential for asbestos containing materials (ACM's) and/or lead-based paints (LBP's) to be present is considered likely (Potentially Significant Impact If Not Mitigated).**

Asbestos is a strong, incombustible, and corrosion resistant material that was used in many commercial products since prior to the 1940's and up until the early 1970's. If inhaled, asbestos fibers can result in serious health problems. Asbestos Containing Materials (ACM's) are building materials containing more than one percent (1%) asbestos (some state and regional regulators impose a one tenth of one percent (0.1%) threshold). Based upon the year the existing structures present on-site were built (prior to 1978), the potential for ACM's to be found on-site is considered likely. The National Emission Standards for Hazardous Air Pollutants (NESHAP) mandates that building owners conduct an asbestos survey to determine the presence of asbestos containing materials (ACM's) prior to the commencement of any remedial work, including demolition.

Until 1978, when the U.S. Consumer Product Safety Commission (CPSC) phased out the sale and distribution of residential paint containing lead, many homes were treated with paint containing some amount of lead. It is estimated that over 80 percent of all housing built prior to 1978 contains some lead-based paint (LBP). The mere presence of lead in paint may not constitute a material to be considered hazardous. In fact, if in good condition (no flaking or peeling), most intact LBP is not considered to be a hazardous material. In poor condition LBP's can create a potential health hazard for building occupants,

especially children. Based upon the year the existing structures present on-site were built (prior to 1978), the potential for LBP's to be found on-site is considered likely.

Implementation of the following mitigation measures will reduce potential health effects associated with ACM's and LBP's to less than significant levels.

Mitigation 3.6-E1

Asbestos Containing Materials: Prior to renovation/demolition activities, the property owner/developer shall retain a Certified Asbestos Consultant to perform an asbestos survey(s) to verify the quantity of ACM's within on-site structures. Should the pre-demolition asbestos survey(s) identify the presence of ACM's, demolition activities shall comply with State law, which requires a contractor, where there is asbestos-related work involving 100 square feet or more of ACM's, to be certified and that certain procedures regarding the removal of asbestos be followed.

Mitigation 3.6-E2

Lead-Based Paints: Prior to renovation/demolition activities, the property owner/developer will determine whether paint must be separated from the building materials (e.g., chemically or physically). The paint waste shall be evaluated independently from the building material to determine its proper management. According to the California Department of Toxic Substances Control, if paint is not removed from the building material during demolition (and is not chipping or peeling), the material could be disposed of as construction debris (a non-hazardous waste). The appropriate landfill operator shall be contacted in advance to determine any specific requirements they may have regarding the disposal of lead-based paint materials (Less Than Significant Impact With Mitigation).

EMERGENCY PREPAREDNESS

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the State CEQA Guidelines. For the purposes of this project, an impact on hazards is considered significant if the project would:

- ❖ *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

For the purposes of this analysis, the following City of Sunnyvale General Plan Policies and Action Statements are used as thresholds to determine significance. Other Policies and Action Statements identified in the General Plan would not apply because they contain non-mandatory criteria (i.e. "encourage" or "consider" rather than "require", "avoid", or "insure"), and/or they do not specifically relate to the specific Plan.

Seismic Safety Sub-Element:

- ❖ *2.4B.2. Provide for the emergency management of the City in order to protect life and property in the event of a disaster.*

- ❖ 2.4B.2a. *Provide annual training for those persons assigned to the Emergency Management Organization (EMO).*
- ❖ 2.4B.3f. *Maintain communication and coordination with community resources that will provide an effective and coordinated response to any emergency/disaster.*
- ❖ 2.4B.3h. *Provide assistance to residents and businesses in emergency preparedness.*
- ❖ 2.4B.5h. *Encourage business and industry to plan for recovery from catastrophic events.*
- ❖ 2.4B.6a. *Provide citizens with information on self-help during and after a disaster.*
- ❖ 2.4B.6b. *Provide speakers for emergency preparedness talks to interested citizens and community groups.*
- ❖ 2.4B.6c. *Identify and coordinate community volunteers that wish to participate in planning, preparedness or response activities.*

Other Agency Thresholds

- ❖ *Presidential Executive Order of October 8, 2001 which created the Office of Homeland Security, the Homeland Security Council and the Governors Special Advisor on State Security and Presidential Executive Order of November 9, 2001 which created the Citizen Preparedness in War on Terrorism.*

The mission of these executive orders is to develop and coordinate the implementation of a comprehensive national strategy to secure the United States from terrorist threats or attacks. The criteria by which to coordinate the functions of the directives have yet to be developed. However, as it applies to the proposed project, one of numerous functions of the Homeland Security Executive Order is to “strengthen measures for protecting energy production, transmission, and distribution services and critical facilities; other utilities; telecommunications; facilities that produce, use, store, or dispose of nuclear material, and other critical infrastructure services and critical facilities within the United States from terrorist attack”.

IMPACT 3.6-F

Emergency Preparedness Impacts: The proposed project, as a policy document, would not directly or physically interfere or impair with an adopted emergency response plan. However, implementation of the proposed Specific Plan is anticipated to cause an indirect, and incremental increase in traffic congestion that could subsequently interfere with and/or impair the ability of responding emergency agencies to access and/or respond to emergencies within the Specific Plan area. Additionally, the subsequent increase in development intensity (occupied floor space) would increase the number of people within the Project Area during both standard and “flex” business hours. If an emergency, disaster or catastrophic event occurs during this time, there would be a greater demand for emergency

services within the Specific Plan area (Potentially Significant Impact If Not Mitigated).

As described and analyzed in Sections 3.11 and 3.12 of this Draft EIR, traffic congestion generated by ultimate build-out of the Specific Plan area would be significant, and could ultimately (depending on phasing of individual development projects, time of day that emergency incident occurs, etc.) interfere with or impede the ability of police, fire or emergency response personnel to adhere to their emergency response time goals. Implementation of the infrastructure (traffic and circulation) mitigation measures identified in Sections 3.11 and 3.12 of the EIR would help ease congestion, as well as provide for additional emergency equipment and personnel to respond to potential emergencies. However, given the level of traffic congestion anticipated, and combined with the increase in development intensity (and subsequent population levels within the Specific Plan area) additional mitigation will be required to ensure that emergency response plans are adhered to and that businesses, employees and patrons within the Specific Plan area are adequately protected pursuant to the goals of the adopted Seismic Safety Sub-element and the General Plan. The City of Sunnyvale encourages businesses to plan for emergencies, including disasters and catastrophic events. To ensure that the future employees of individual and/or future projects within the Specific Plan area are sufficiently prepared for an emergency, the following mitigation measure is required.

Mitigation 3.6-F1

Emergency Preparedness Impacts: Prior to the issuance of the first certificate of occupancy, the property owner/developer shall prepare an emergency preparedness plan for review and approval by the Community Development Department. The plan shall include, at a minimum the following elements:

- ❖ *Location of on-site emergency exits.*
- ❖ *Emergency contact information.*
- ❖ *Evacuation procedures in the event of disaster (Less Than Significant Impact With Mitigation).*

Mitigation 3.6-F2

To reduce to the need for additional emergency services the following mitigation measure shall be implemented in addition to compliance and conformance to the above-mentioned policies and action statements. The consequences of implementing the mitigation policy will create a less than significant impact for emergency preparedness.

- ❖ *The City shall encourage disaster service training for all businesses and employees in Moffett Park Specific Plan area.*
- ❖ *The City shall work with businesses and the American Red Cross to establish an ARK within the Specific Plan area.*
- ❖ *The City shall incorporate the policies and requirements established by the Governors Special Advisor on State Security for the purposes of Homeland Security (Less Than Significant Impact With Mitigation).*

3.6.3 Conclusion

With the implementation of the mitigation measures identified in this section, hazards and hazardous waste impacts would be reduced to less than significant levels. No significant and unavoidable impacts have been identified in this regard.